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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------|------------------|
| 10/798,031 | 03/11/2004 | Takao Macda | 035576/275466 | 6003 |
| 826 | 7590 | 03/20/2006 | EXAMINER | |
| ALSTON & BIRD LLP BANK OF AMERICA PLAZA 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000 | | | WILKINS III, HARRY D | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1742 | |

DATE MAILED: 03/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/798,031

Applicant(s)

MAEDA ET AL.

Examiner

Harry D. Wilkins, III

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 13-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/631,491.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/11/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeshita et al (JP 06-228611).

Takeshita et al anticipate the invention as claimed. Takeshita et al teach (see English abstract and machine translation) a method of making a hydrogen storage alloy of the $MmNi_5$ type (which has a $CaCu_5$ crystal structure), wherein 0.2-5.0 wt% of a metal is added to the alloy melt after the alloy melt has been formed. Mg is expressly disclosed on the list.

Regarding the fact that the hydrogen storage alloy powder is subjected to a further heat treatment which vaporizes the added Mg, nothing in Applicant's claims exclude further processing steps.

Regarding claim 14, Takeshita et al disclose using the Mg with a $MmNi_5$ hydrogen storage alloy where at least a portion of the Ni was replaced by Co. The Mg is added to the melt after the initial melting step.

Regarding claim 15, Takeshita et al teach using pure metal to add the addition agent to the melt.

3. Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Yanagihara et al (JP 60-250557).

Yanagihara et al teach (see abstract) making a hydrogen storage alloy that has the general formula $\text{LaNi}_x\text{Co}_y\text{M}_z$. The overall composition has a formula that would make the crystal structure to be of the CaCu_5 type. The alloy was formed by melting (see page 4 of translation provided in parent application). Among the disclosed metals for M, Yanagihara et al expressly disclose that Mg is suitable. The subscript for M, z, is between 0 and 1. Thus, Yanagihara et al disclose adding a small amount of Mg to the melt. Therefore, Yanagihara et al disclose adding Mg to the alloy in an amount of 0.1 to 1.0 wt%.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagihara et al (JP 60-250557).

The teachings of Yanagihara et al are described above.

Since Yanagihara et al do not expressly teach an example containing between 0.1 and 1.0 wt% Mg, it may be considered that Yanagihara et al do not anticipate claim 13. As such, the Examiner further rejects claim 13, based on the fact that it would have been obvious to one of ordinary skill in the art to have optimized the amount of Mg

Art Unit: 1742

present in the alloy in order to minimize the battery pressure at the final stage of charging which was the effect of the M element as taught by Yanagihara et al (see page 3 of translation).

Regarding claim 14, the melt further included Ni and Co. Yanagihara et al teach (see page 4 of translation) that all of the constituents were added to a furnace and melted together. Thus, Yanagihara et al fail to teach adding the Mg after the melt was formed. However, a change in the order of adding ingredients has been held to be obvious absent evidence of unexpected results. See MPEP 2144.04.IV.C.

Regarding claim 15, Yanagihara et al teach adding metals in there metallic form to the melt.

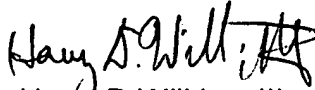
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D. Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Harry D Wilkins, III
Examiner
Art Unit 1742

hdw